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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/825,212 | 04/16/2004 | Stephen Alan Allpress | 66365-024 | 7256 |
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| MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096 | | | | |
| | | | EXAMINER BAKER, STEPHEN M | |
| | | | ART UNIT 2133 | PAPER NUMBER |

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,212

Applicant(s)

ALLPRESS, STEPHEN ALAN

Examiner

Stephen M. Baker

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2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 100504,082004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-7 and 13-19 are objected to because of the following informalities:

In claims 1-7 and 13-19, "threshold metric" apparently should be "metric threshold."

In claims 1 and 13, "a cyclic redundancy check code has been passed" apparently should be "a cyclic redundancy code check has been passed."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. Claim 25 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

It's not clear that the scope of a "computer program product comprising program code means" is confined to tangible media, and the claim further does not specify a "machine readable medium."

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6-11, 13, 18-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,292,918 to Sindhushayana *et al*/ (hereafter "Sindhushayana").

Sindhushayana discloses arrangements for terminating decoding iterations in a turbo decoder of a serial or parallel turbo code. Sindhushayana's iteration termination arrangements include performing, after each iteration, a determining of a minimum absolute probability value for all the bits in the block being decoded (column 3, lines 40-49), which can be supplemented by a CRC check when the minimum absolute probability value for all the bits in the block being decoded is above a threshold value (column 3, lines 50-58). Accordingly, Sindhushayana discloses "determining whether a pre-determined decoder termination threshold metric has been met; only if the threshold metric has been met, determining whether a decoder termination test based on a cyclic redundancy check code has been passed; and only if the cyclic redundancy check test has been passed, terminating the decoder iterations."

Regarding claims 6 and 18, in other embodiments, alternatives to the minimum absolute probability mentioned by Sindhushayana are the average absolute probability, the median absolute probability, and a next-to-minimum absolute probability (column 4, lines 4-12). The probability values in turbo decoding are log-likelihood ratio values.

Regarding claim 25, Sindhushayana's decoding may be implemented by programmed DSPs (column 9, line 28), requiring a "computer program product comprising program code means."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-5, 12, 14-17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana.

Regarding claims 2-5 and 14-17, although Sindhushayana does not specifically mention substituting the threshold test based on the minimum absolute probability value with a threshold test based on cross-entropy, on sign change ratio, on sign difference ratio, or on some other hard-decision measure, Sindhushayana does suggest that any other measures indicative of the progress of turbo decoding may be used in place of the measures mentioned by Sindhushayana. Official Notice is taken that cross-entropy, sign change ratio, sign difference ratio, and other hard-decision based measures were well-known measures indicative of the progress of turbo decoding at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute cross-entropy, sign change ratio, sign difference ratio, or some other hard-decision measure in place of Sindhushayana's progress measures. Such substitutions would have been obvious because cross-entropy, sign change ratio, sign difference ratio, and other hard-decision based

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measures were already well-known measures indicative of the progress of turbo decoding.

Regarding claims 12 and 24, Sindhushayana does not specify that the cellular wireless system is a "W-CDMA" cellular wireless system. Official Notice is taken that W-CDMA was a well-known cellular wireless system standard at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Sindhushayana's turbo code decoding arrangements to turbo code decoding in a W-CDMA cellular wireless system. Such an application would have been obvious because W-CDMA was already a well-known cellular wireless system standard.


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb